

REMARKS

Claims 1-26 are pending. Claims 1, 3, and 12 are being amended.

One embodiment of the present invention is directed to a method of coding a digital audio data stream using an AC-3 encoding system implemented on a fixed point digital signal processor having plural levels of computation precision. In contrast to prior art AC-3 encoding methods, the method employs different computation precision levels for the plurality of computation phases that comprise the method. For example, the transient detection phase may use single precision (16 bit) for data and coefficients, while forward transform windowing uses single precision (16 bit) for data and double precision (32 bit) for coefficients, frequency transformation uses double precision for data and single precision for coefficients. It is important to note that the same audio data stream is subjected to both single precision and double precision computations to produce coded output data.

Claims 1-26 were rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 5,787,025 to Muwafi et al. ("Muwafi") in view of Standard A/52 – Digital Audio Compression Standard AC-3 ("ATSC").

Muwafi and ATSC do not teach or suggest the invention recited in claim 1, as amended. Claim 1 recites a method that includes first and second computation stages involving arithmetic operations using first and second level of computation precision, respectively. In addition, claim 1 recites that the first computation stages produces intermediate audio data and the second computation stage operates on the intermediate data to produce coded audio data.

Muwafi and ATSC do not teach or suggest such computation stages. As noted by the Examiner, Muwafi discloses an arithmetic manipulation unit (AMU) that has two operation modes: single precision mode and double precision mode. However, Muwafi does not suggest using one of the precision modes to produce intermediate audio data from digital audio data and another one of the precision modes to encode the intermediate audio data into coded audio data. Instead, Muwafi only suggests using either single precision mode or double precision mode – not both precision modes for the same digital data. ATSC does not mention precision levels, and thus, does not supply the missing teachings.

There is also no suggestion or motivation in the prior art for combining Muwafi with ATSC to create the claimed invention. Muwafi is directed to a general DSP that reads and

writes data from/to memory and performs calculations on the data. ATSC is directed to the AC-3 encoding standard that includes several phases of the encoding process. There is no motivation in Muwafi, ATSC, or anywhere else in the prior art for employing one of the precision modes of Muwafi for one of the encoding phases of AC-3 and another of the precision modes of Muwafi for another one of the encoding phases of AC-3. The Examiner asserts that AC-3 is merely one of several straightforward possibilities from which the skilled person would select to implement Muwafi, but such a general conclusory statement cannot establish any motivation for the specific combination of Muwafi and the highly complicated AC-3 encoding standard of ATSC. Nothing in the prior art indicates that such a combination would be straightforward at all and nothing in the prior art provides a reason for turning to ATSC to solve some shortcoming of Muwafi.

For the foregoing reasons, claims 1-12 are nonobvious in view of Muwafi and ATSC.

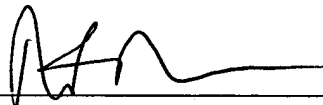
Although the language of claims 13-26 is not identical to that of claim 1, the nonobviousness of claims 13-26 will be apparent in view of the above discussion.

The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

All of the claims remaining in the application are now clearly allowable. Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,

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